



# THE RARA RAG

Newsletter of The Rochester Amateur Radio Association, Inc.

Founded in 1931

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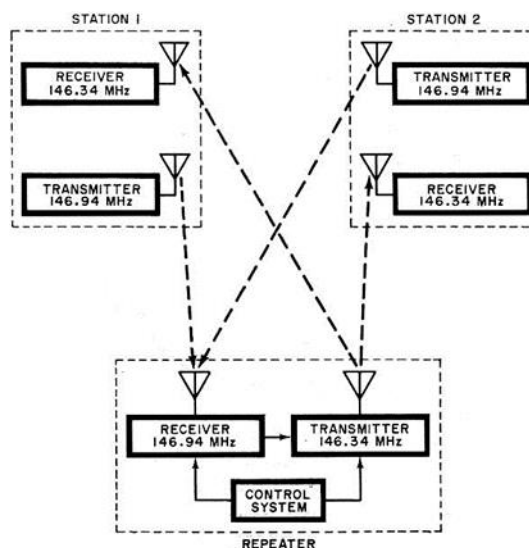
## GETTING STARTED WITH VHF/UHF

SCOTT THEIS, W2LW, RARA VICE PRESIDENT

Whether you have just obtained your Technician license or are a seasoned Extra, there is always more to learn about ham radio. This month's presentation will be on VHF/UHF operating, modes, radios, repeaters, and more. It is generally the case that most freshly minted hams cut their teeth on 2-meters. This is particularly true today when an HT can be purchased for as little as \$30 and even reasonably capable mobile rigs start at \$60. But once you buy one, now what? How do repeaters work? Where are the local repeaters? How do I program a radio? How do I know my HT is actually hitting the repeater? What is considered good 2-meter etiquette?



Tim Guyot, KB1POP, our President, will be sharing his experiences and knowledge about VHF. Tim got into amateur radio during college at RIT in 2007. Thanks to Dave Snyder (KC2REO) and Jim Stefano (W2COP) he had a variety of experiences with the club station, K2GXT, and public service. He worked on antennas on the roof of the Student Alumni Union and learned about repeaters in the shack on Ellingson. Public service gave Tim practical experience helping others and working on directed nets.



Courtesy Popular Electronics

Please join us on Wednesday, December 4th, 2019, 7:00PM at the Boy Scouts Headquarters at 2320 Brighton Henrietta Townline Road, Rochester, New York 14623.

The Elmer's Corner starts at 6:15PM ahead of the General Meeting.



K2JD

N2EH

W2EOC

# BOARDZ BUZZ

KARL HEINZ KREMER, K5KHK

RARA does a lot. It is easy to forget about all the things that are going on throughout the year. When you come to every monthly meeting, or read the Rag on a regular basis, you get a good idea of all the activities, but it's easy to miss out on things for those that only attend some of the meetings or events - for example just the annual auction (we had 105 attendees who signed in, that is probably more than double of what we get for a regular meeting) or the ham fest.

There are so many things we do, that I sometimes forget what's actually on the list. Gary Skuse's (KA1NJL) presentation about RARA's future from August 2018 (<https://www.rochesterham.org/meetings/2018-08-RaRa-Club-Direction.pdf>) is a good reminder.

One thing that we are not very good at is publicizing what we are doing. Every now and then we get lucky, and a local TV station reports about the Pumpkin Patrol, or hears about how ham radio operators are involved in hurricane related emergency communications and contacts us about any local involvement, but there is no coordinated effort to tell the public "hey, we are here, and we do cool stuff".

It's not only about the general public, it could also be about bragging to our fellow hams about what we are doing. Take this for example: The Southeast Louisiana Amateur Radio Club's support of their local "Bike MS" ride got a big writeup on the ARRL web site (<http://www.arrl.org/news/view/louisiana-mississippi-amateur-radio-volunteers-support-bike-ms-dat-s-how-we-roll-event>). I wonder how many volunteer hours we are providing to support the Tour de Cure, and how many of those are provided by Mike Moore (KC2NM) just preparing for the event.

Wouldn't it be nice if we could get credit for the Tour de Cure and other public service events in such a public space?

Or, how can we promote our hobby in a way that interests others to either consider studying for and taking the test and getting on the air, or to convince already licensed hams that membership in our club is something worth considering.

What it comes down to is that we need to be more proactive in doing "publicity".

The RARA board needs some help with this. We are looking for one member to take ownership of these tasks as the "publicity leader", and then work with the board and other members to make things happen.

We have several ideas that might be useful to educate others about ham radio in general and the club's activities. Here are two:

- A standard presentation that can loop for hours on a computer monitor. This could be used for example during the Rochester Science Museum event around Christmas, or at the Charlotte Lighthouse for the Lighthouse and Lightship operating event.
- Create a set of tri-fold display panels, similar to something that Tim Brown (WB2PAY) saw at NEAR Fest in New Hampshire – you can find some pictures of these displays here: <https://www.n1fd.org/2019/09/17/nars-hamxposition-2019/>

We are looking for somebody who would like to take over this role of "Publicity Leader". If you are interested, you don't even have to submit a resume, just talk to one of us board members.

## CALENDAR OF EVENTS

**WEDNESDAY DECEMBER 4, 2019** - RARA General Meeting  
7:00 PM at BSA Headquarters  
2320 Brighton Henrietta Town Line Rd

**THURSDAY DECEMBER 5, 2019** - RARA Board of Directors Meeting  
6:30 PM at Novaworks, 333 Metro Park, F-500

**WEDNESDAY JANUARY 1, 2020** - No Meeting

**WEDNESDAY JANUARY 15, 2020** - RARA General Meeting  
7:00 PM at BSA Headquarters  
2320 Brighton Henrietta Town Line Rd

**SATURDAY FEBRUARY 15, 2020 WINTERFEST 2020**

**JUNE 6, 2020 RARA HAMFEST 2020**

**July 11, 2020 RARA PICNIC 2020**



## EDUCATION

TIM BROWN, WB2PAY, EDUCATION COORDINATOR

### GOTA (GET ON THE AIR)

RARA's Field operating event in October was a great success. More operating events will be held in 2020.

To make each event a bit different, there will be a theme for each operating event.

February 15th -- RARA Winterfest at Mendon Ponds Park. **Using rigs with DSP Filters**

May -- **Parks on the Air** at Hamlin Beach State Park - Learn about low impact portable operations

June -- Tour De Cure -- **VHF Net Operations**

June -- ARRL Field Day -- **Contesting - All Modes**

July -- RARA Picnic at Mendon Ponds Park -- **Stealth and Portable Antennas**

August -- Lighthouse Lightship Weekend at Charlotte Lighthouse.  
-- **HF and VHF operations**

September -- **Digital Modes and CW Operations**

October -- Pumpkin Patrol -- **VHF Net Operations**

## RARA ACADEMY WORKSHOPS FOR 2020

### 2020 Topics: (Dates to be confirmed & Locations TBD)

**February 22nd -- ARDUINO MICRO-CONTROLLER** (Exact topic is TBD )  
An Optional Arduino Nano V3.0 board may be purchased. Cost TBD.  
Presenter will be Forest Shick, WA2MZG

**March 14th -- FLDIGI Digital software-** Both Live and simulated contacts will be made.  
Presenter will be Paul Conaway, KD2DO

**April 11th -- DSTAR AND DMR - Learn the basics of these modes. Contacts using repeaters or hotspots will be demonstrated.**  
Presenters will be Mike Moore, KC1NM and Steve Verzulli, KA1CNF

Latest Academy information is available at [https://www.rochesterham.org/rara\\_academy.htm](https://www.rochesterham.org/rara_academy.htm)

### THE ELMERS CORNER

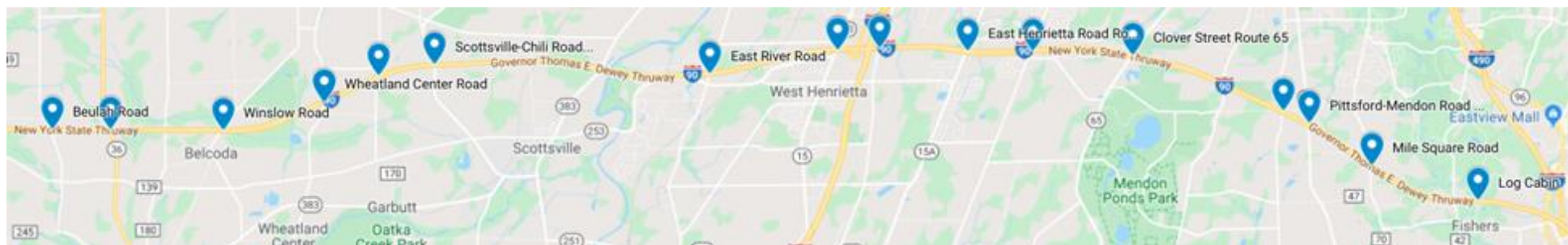
Our next Elmers Corner will be at the Dec. 4th Meeting from 6:15pm to 6:45pm prior to the start of the regular meeting.

Let our Elmer help you with your questions or topics of interest.  
**Scott Theis, W2LW, will host the December session.**

# PUBLIC SERVICE REPORT

MIKE MOORE, KC2NM, PUBLIC SERVICE COORDINATOR

The Pumpkin Patrol was held on the 16 Monroe County bridges on Wednesday, Oct. 30 and Thursday, Oct 31. There were no incidents reported either night. At the request of ARES, we used the ARES repeaters for the event and agreed to use them for hamfest talk-in and other events when practical. Ed Wilkonski did a great job organizing the event! He has sent each of the participants a "Thank You" note, reported the service hours to Tim K9VB and has requested the recognition certificates from Trooper Stumpf of the NYS Troopers. [Here](#) is a map of the deployment for this year's Pumpkin Patrol (click on the bridges). Participants were K1EM, K2DPC, K2UW, KA2WNS, KC2NM, KC2YSO, KD2EHW, KD2IOB, KD2RAF, KD2SHV, N2BNE, N2IZX, N2YPM, NS2B, W2JAT, W2RMB, WA2CHV, WB2KAO, WB2QCJ.



The RMSC Holiday Science & Technology Days will return this year. In years past RARA has provided hands-on exhibits, ham radio information, and history. RDXA has provided and operated a working HF station. RDXA typically sets up the antenna the week before on the roof. RARA's exhibits can be set up the morning of. Don Kiser has the hands-on exhibits in his basement. We are hoping that we can staff this event Friday through Sunday following Christmas. Please sign up on our website to be part of this educational event.

We are organizing our 2020 club public service program and the planned activities and dates are shown in the table below.

## Upcoming 2019 Event

Holiday Science & Technology Days	Rochester Museum & Science Center	Friday-Sunday	Dec 27-29, 2019
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## Upcoming 2020 Events

Tour de Cure	Xerox Campus Webster	Saturday	June 13, 2020
Bike MS: ROC the Ride	Genesee Valley Park - Rochester, NY	Saturday	Sept. 12, 2020
Fairport Lift Bridge Regatta	Erie Canal – Fairport, NY	Saturday	September 19, 2020
JOTA (Verify CTC Date)	Camp Babcock Hovey	Saturday	Oct. 17, 2020
Pumpkin Patrol	Overpasses of the New York State Thruway	Friday & Saturday	Oct. 30-31, 2020
Holiday Science & Technology Days	Rochester Museum & Science Center	Monday - Wednesday	Dec. 28-30, 2020

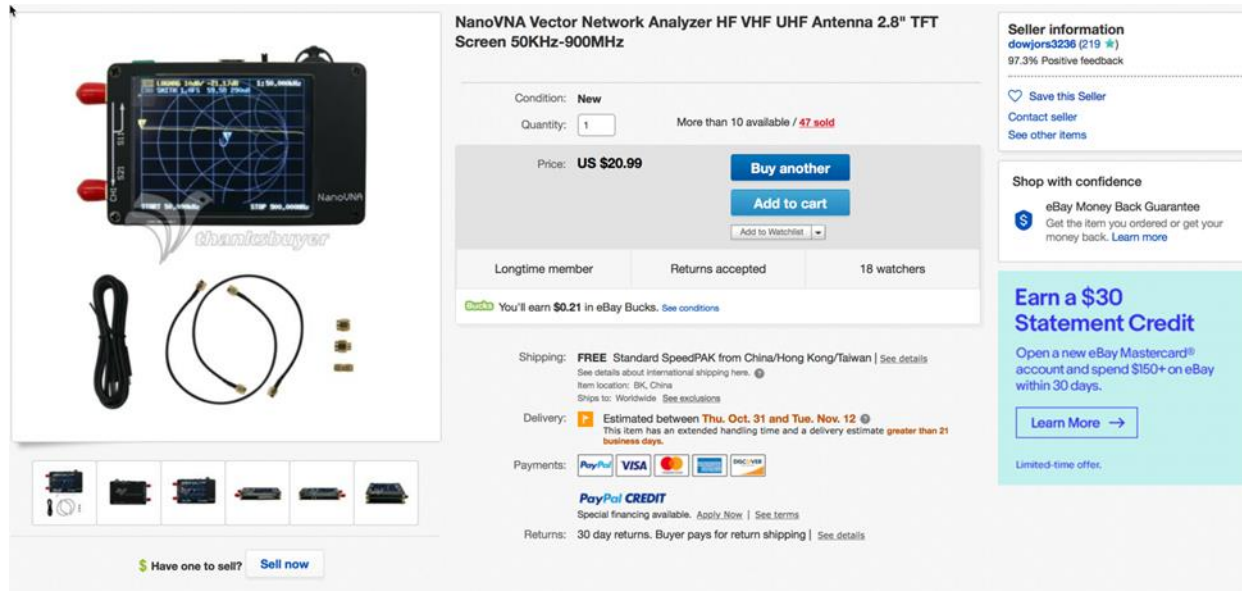


# NANOVNA - TOY OR TOOL?

KARL HEINZ KREMER - K5KHK

For the last few months, a new product has been showing up more and more on eBay and various Chinese online retailers: The nanoVNA.

It comes in different configurations and in different colors. What is common is that the price is well below what one would expect to pay for a VNA - or Vector Network Analyzer. Is it any good, or is it just another toy that one buys, plays with for a few hours and then puts on the shelf to never be touched again? Here is one of the cheaper listings on eBay.



The image shows an eBay listing for a NanoVNA Vector Network Analyzer. The listing includes a main image of the device, which is a small black rectangular unit with a color TFT screen and two SMA connectors. Below the main image are smaller images of accessories, including cables and calibration targets. The listing text provides details about the product, including its frequency range (50KHz-900MHz), condition (New), price (\$20.99), and shipping information. It also includes a section for seller information, showing a 97.3% positive feedback rating. A prominent banner offers a \$30 Statement Credit for opening a new eBay Mastercard account. The listing is from a seller named 'dowjors3236' and is located in BK, China.

I've seen prices range from \$17 to \$100 and depending on the vendor, the case is either black or white, and might have a gecko on it. As far as features go, some come with a built-in battery, other have to be powered by a USB-C connector. Some come with SOL (short/open/load) calibration targets, others don't have these required accessories. Sometimes it's not even clear what you get when you order. What you get is not necessarily reflected by the price. Mine came without the battery and the calibration targets. I already had SOL targets for my antenna analyzer so that was not a big problem. I also found a matching battery on amazon.com, and after soldering it and fixing it double-sided sticky tape, you would not even know that it was not part of the original device. A word of warning however, especially when it comes to the cheaper offerings: Always check the recent ratings of the seller, and if something looks like it is too good to be valid listing, it's probably somebody trying to scam you.

Here is what it is: The nanoVNA is "palmtop" 2 port VNA that covers 50KHz to 900MHz (there are software versions that extend the upper limit even further), it

has a touch screen that asks for a stylus (or fingers much smaller than mine), and it offers up to four "traces" or curves at a given time.

When you look at the device, it's a pretty simple construction: It's basically a sand-



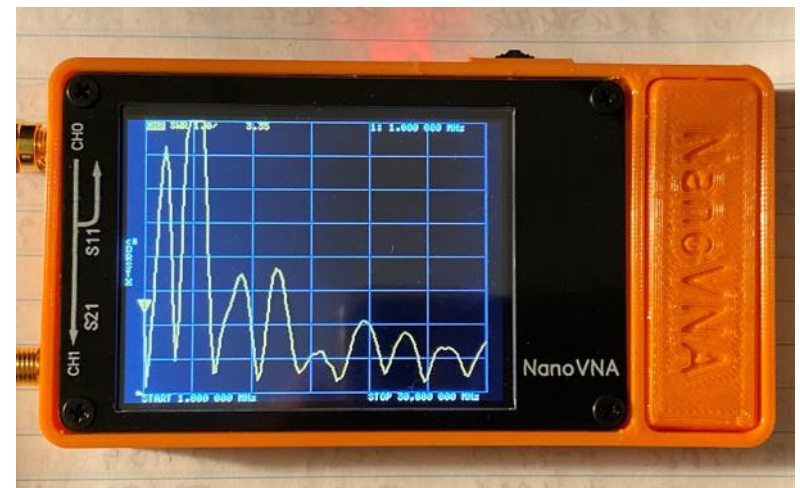
wich of two aluminum plates, the display and a PCB - open on the sides. There is also a rocker switch that is exposed to the elements and fat fingers. I decided to 3D print a case for it.

Using a VNA is not quite like taking a measuring tape and figuring out how long a piece of wood is... It takes a bit of a learning curve. Fortunately, there is a lot of online knowledge that one can tap into. Here is a three part series that explains what a VNA is, how to calibrate the nanoVNA and how to perform measurements:

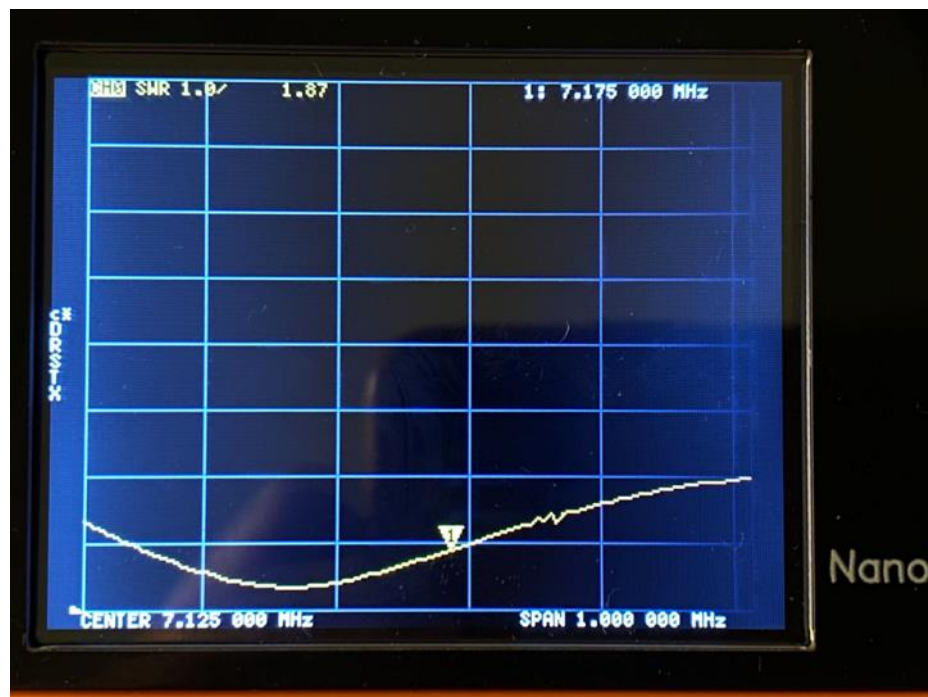
<https://hexandflex.com/2019/08/31/getting-started-with-the-nanovna-part-1/>

By now there are also a number of great YouTube videos that show how to get started with the nanoVNA.

I ran a test on my end-fed halfwave antenna.

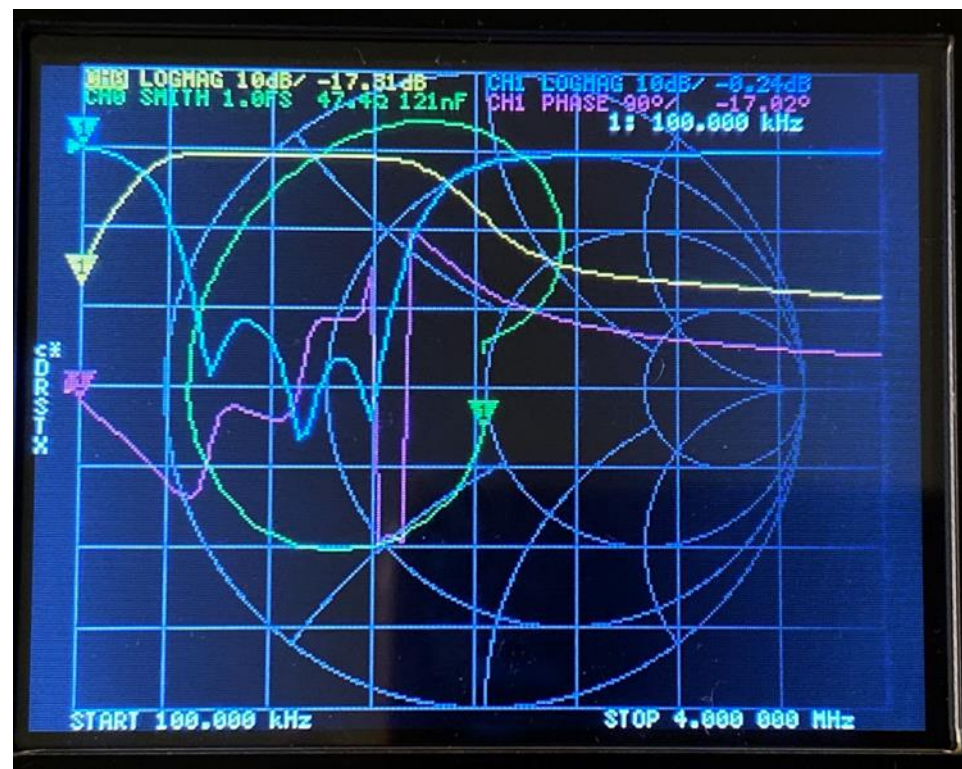


This is in line with what I figured out with my antenna analyzer. Here is the graph zoomed into the 40m band:



You can place cursors and read e.g. the SWR value at a specific frequency (SWR of 1.87 at 7.175MHz in the picture).

Using a VNA as antenna analyzer does not even scratch the surface of what a VNA can do. Here are four traces that describe a BCI filter that eliminates interference from AM broadcast stations:



I've only spent some limited time with this new tool (yes, it is a too, and not just a toy). There are a lot of things it can do, and there is a pretty active community online that is adding functionality and creating "extensions" like computer software that can run the VNA while tethered to the computer and is adding functionality that is not available in the on-board software.

The whole project is open-source - both the hardware and the software designs are published on GitHub (<https://github.com/ttrftech/NanoVNA> - with various clones). It's actually pretty interesting to see how the hardware is implemented.

The nanoVNA is not competing with "grown up" VNAs from HP, RS or other well known manufacturers of test equipment, but it definitely allows me to add a new tool to my workbench, and when it comes to designing and verifying the performance of filters, it will be great to have it available.

Since I started to write this article, a number of new videos and blog articles have been posted, which is not surprising for a relatively new product. Your best chance of getting something that is up to date and uses current software is to search on your own. Type "nanoVNA tutorial" into Google or YouTube's search and see what comes up. As far as keeping up to date is concerned, the designer of one of the clones, the nanoVNA-H, just hinted that there might be new hardware out in a month or so that incorporates early feedback from users.



# ART – AUTONOMOUS RADIO TELESCOPE

MARTIN PEPE

## Callisto Solar Radio Spectrometer Development in Western New York State, USA

### Preface;

Over the years, I've read with great interest the many RARA projects in the club's newsletter. I hope you find our work below an acceptable addition to this excellent collection. This radio telescope is being developed for the global [Calisto](#) solar telescope network.

### Intro;

#### The School & Program;

Rochester Institute of Technology (RIT) is an internationally known Engineering and Technology college, based in Rochester, New York USA starting in 1829. In addition to traditional university departments, it is renowned for its cutting-edge technology development programs. The Multi-Disciplinary Senior Design (MSD) Program, part of the Kate Gleason College of Engineering, is meant to mimic real life (industrial environments) by exposing senior students to a team approach to project and process development. In doing so, student transition into the workforce is almost seamless. The project below has been developed under this umbrella.

#### Project ART;

Our development of a Solar Radio Telescope to study Sunspots began as an alternative to optical telescope observations, given the local WNY weather. We are in one of the cloudiest sections of the country due to the Great Lakes being just to our west (windward), so the number of clear observing days is very limited. The fact that clouds are transparent to radio waves, made a radio telescope, a natural observing solution.

There was a desire to make a fully **Autonomous Radio Telescope** system to study the Sun, including pointing and tracking, data collection, analysis, and information transfer (to Zurich, SZ). By anyone's standards, this is quite an undertaking in the professional world, let alone a student driven one. A means to breakdown critical functions into digestible pieces (modules) had to be developed, for a new student team to tackle every school year.

The first few years were spent in developing 'proof of concept' ideas for basic functions. This part was one of frequent frustration and dead ends. Ideas that seemed (theoretically) logical just didn't pan out with real world data. Example, most Callisto systems use a standard Log Periodic 'Yagi' like design. In our location, however, a strong local TV station swamped the rear lobe of our LP design. Thus, the development of a modified feed, 7' (2M) dish, for its superior front to back ratio. The next few years saw many system partitioning 'paper'

concepts of basic functions. Finally, we settled on prioritizing the most difficult functions first.

By far, we viewed the autonomous tracking feature the most difficult function to automate. Waking the system up in the morning, pointing to the east and acquiring the Sun was the starting point. Tracking during the entire day, until Sun-set was the goal, without needing any (local) human operator intervention. The location ([Ionia, NY](#)) is rather remote to the Rochester city center (away from noise & interference sources), and, almost an hour from the RIT campus. The logistics ruled out productive daily and weekly visits by the student teams to work on the system, especially since there are no appropriate labs, test equipment or model shops nearby. Further, imagine the challenge of having to disassemble the entire system and transporting it back to campus each new school year, for the incoming development team, a very time consuming and slow process.

The first senior development team [P15571](#) was tasked with this mission critical, tracking function. An RA / Dec mount was designed, built on campus, and demonstrated. It was then installed in Ionia to enable basic (manual) operation. This accomplishment enabled some local data taking during the summer, to further our understanding of the local ambient noise, and allow taking basic Solar data. This effort, along with a totally manual 'proof of concept' portable

### December Raffle Prizes

- Bird \$100 Gift Certificate
- Nuts and Volts Magazine Gift Certificate
- SERVO Magazine Gift Certificate

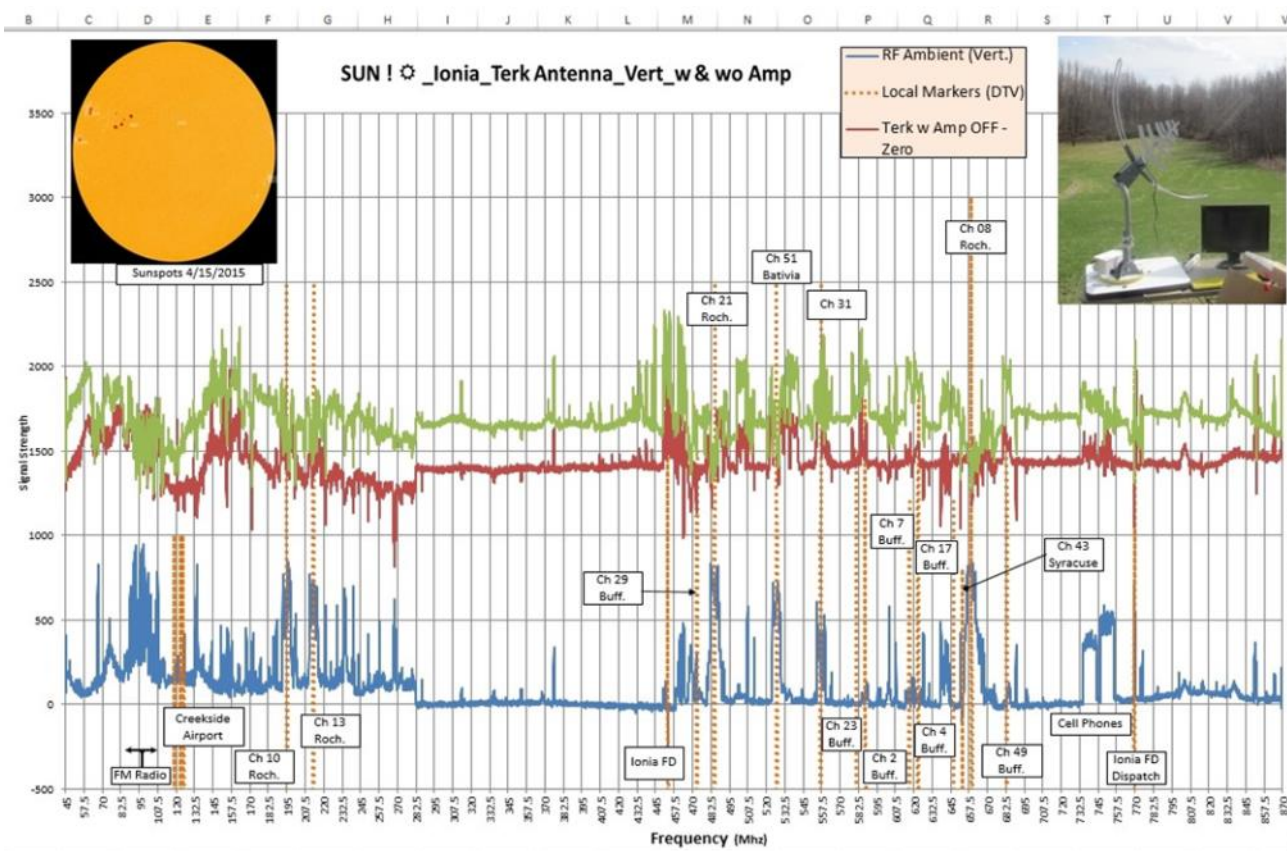
### Coming in January

- Elecraft DL1 20W Dummy Load



bench set-up is shown below.

The bottom (Blue) trace shows the local interference (FM radio, TV stations, a cell phone tower, etc.). The two upper traces (Red with out an amplifier, Green with an amplifier) show the actual Sun signal with the bottom (Blue) trace mathematically removed. Note the very large Ch 8 TV signal (@ ~ 658 MHz) removed from the two processed Sun data sets. It is possible to change the individual gain coefficients on each slice of the data to make the local noise essentially 'disappear'. A visual SOHO image of the Sun at the time (with sunspots), is shown in the upper left, and the portable test setup in the upper right. The 'local noise' (Blue) trace data, was taken with a vertical dipole.



The second design team **P17571** concentrated on controls and software development. Our initial effort was to try to use Radio Eyes software to add the systems intelligence to our project. This software is like a (visual) Planetarium software program (Stellarium, etc.) but for what's 'visible' in the **RF** radio sky.

The third design team **P18571** consisted of fleshing out the controls, adding an uninterruptable power supply (UPS) to minimize system crashes and data corruption, improving software operability and looking into the possibility of

nighttime operation by adding low noise amplifiers (LNAs). The UPS was not designed for continuous operation in the event of a power loss, but a means to provide a 'soft landing' so that 'in process' data files could be saved, systems could be orderly shutdown, etc., then restarted from a known good state (& position) when power re-appears. The LNAs are meant to try to acquire the top 40 brightest RF objects in the northern night sky, limited by the meager dish size of only 2 meters, (of **all** the tasks, this, is our lowest priority).

The next design team **P19571** concentrated on designing a LabView like GUI (graphical user interface) to look like a piece of test equipment, for operator input and controls. At this point, the system was operational enough to make preliminary data runs and to try sending preliminary data to Zurich.

The present team **P20571** is concentrating on systems level integration, software, and functionality, including a web based interface 'portal' for remote operations. The hardware is being expanded to include dual receivers, one to collect the Sun signal, the other to collect the local interferers. The 'local' dipole is mounted right on the telescope mount, so it tracks with the dish and has its 'null' axis pointed directly at the Sun, thus minimizing the Sun signal, and maximizing the related 'local' RFI signal. The intent is to send the regular \*.fits, \*.csv files, etc. that have been the traditional Callisto formats. Maybe later the eCallisto network will be able to expand into corrected formats compensating for the each of their local interferences, at problem Callisto stations.

The photo (on the next page), taken this last summer, between build blocks, shows the Rochester area (Ionia, NY) installation of our Callisto station called '**KROC**' located at [ **N 42.929826, W -77.500156** ].

Our hope is that we will be 'on the air' by the end of this school year, May 2020.

Sincerely,

*Martin Pepe*

**Do you know what your Sun is doing today ?**  **ART does !**

Credits;

Recognition and credit(s) have to be given to those supporting this effort.

- Funding & (remote) site location in Ionia, NY was provided under an 'educational outreach grant' by the Astronomy Section of the Rochester Academy of Science (**ASRAS**).
- Site selection and characterization was performed by students from the Uni-



- versity of Rochester ([U of R](#)).
- Development and Lab facilities were provided by [RIT](#) Kate Gleason College of Engineering.

Besides the direct involvement of the mainline student teams, additional thanks, has to be given to the many students, professors and support personnel who have given us their continued support over the (many) years of its incubation, and development.

Cloudy Skies ? – *Switch to a longer wavelength !*



## A POWER SUPPLY FOR 250VDC, 12VAC, 6VAC AND 2.5VAC

BILL HOPKINS, AA2YV

### *The “Rig” and the Caper*

It is/was November again and time for the AWA Bruce Kelley QSO Party, when Antique Wireless Association members and others haul out their 1929 vintage Hartley oscillators (or similar types) and get on the air. It’s a monkey-zoo out there. We spend 24-hour slots on two weekends, and get on 160, 80, and 40 meters to chat with other chirpy-signaling CW hams. The band watchers know we’re coming every year, so they humor us and let our less-than-great signal tones go by the boards. (This year the schedule was: Nov. 9 2300 GMT to Sun. Nov. 10 2300 GMT, and Sat. Nov. 16 2300 GMT to Sun. Nov. 17 2300 GMT.)

This is a NO crystal affair. You’ve got to tune up your own oscillator and “find” the frequency. Use any receiver you want. I stick to 3.555-3575 MHz. My 13-turn inductor (2.75 in. diameter) is made from 10-ft roll of 1/4 inch copper tubing and does a fine job. I have one Hartley that uses a Type 10 tube. This time, though, I’ve built a Hartley using a Type 27 (gift of Dean Faklis – NW2K - at the AWA). (The AWA website says: “The QSO Party typically operates between 1800 to 1810 KC, 3555 to 3570 KC, and 7100 to 7125 KC, plus or minus depending on QRM.”)

To earn old-timey points in this QSO Party/not-a-real-contest, you have to use a tube type that was available in 1929 or earlier. No 6L6s, m’friend. (If you’re not an AWA-Hartleyite, come aboard anyway and QSO with us.) The Hartley style oscillator information is available on the Antique Wireless Museum website at: [http://www.antiquewireless.org/uploads/1/6/1/2/16129770/2017-10-11-01-building\\_a\\_1929\\_style\\_hartley\\_transmitter.pdf](http://www.antiquewireless.org/uploads/1/6/1/2/16129770/2017-10-11-01-building_a_1929_style_hartley_transmitter.pdf). (Watch out for high voltages on open wires!)

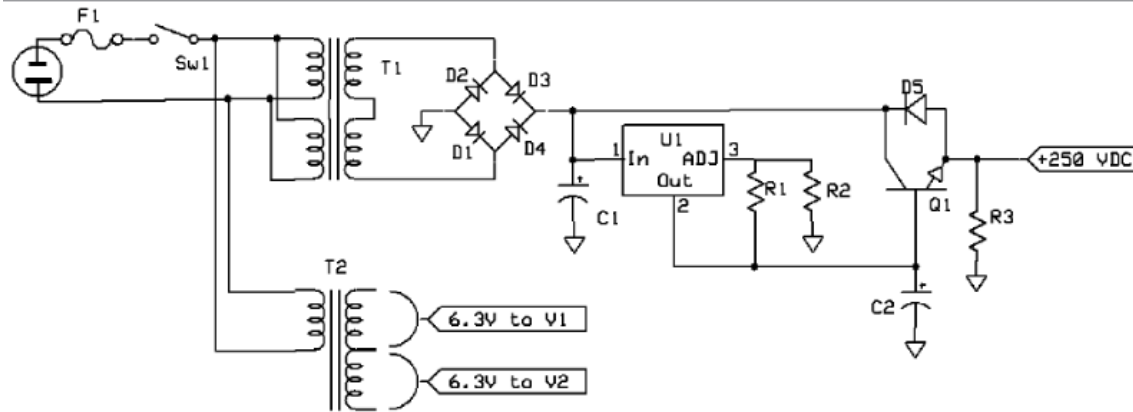
### *So Now, the Supply*

The oscillator is easier to build than the Power Supply, I think. I needed one that produced less juice, about 250 volts DC, that the 27 Type tube wouldn’t find objectionable. And I needed 2.5 volts, an odd heater voltage these days. I had several options for transformers from the junkie boxes available to me, but I decided to come clean and order the two trannys. I’m glad I did.

The Power Supply information is available on the AWA webpages. It comes from Cam Hartford (N6GA), CQ Magazine’s QRP Editor. Sadly, he is now a SK. (Find all you need to build the power supply at: [http://www.antiquewireless.org/uploads/1/6/1/2/16129770/2017-10-11\\_power\\_supply\\_plans.pdf](http://www.antiquewireless.org/uploads/1/6/1/2/16129770/2017-10-11_power_supply_plans.pdf).)

Except for two more items that were pennies cheap (TIP50 NPN power transistor; small 689 3-terminal regulator), I had just everything I needed, even a little junked heat sink for the TIP50. My rat’s nest of all sorts of wire (old computer power supplies, etc.) came in handy. The enclosure wasn’t critical, but I chose

one from the garage that was deep enough to permit me to be a sloppy space-waster.



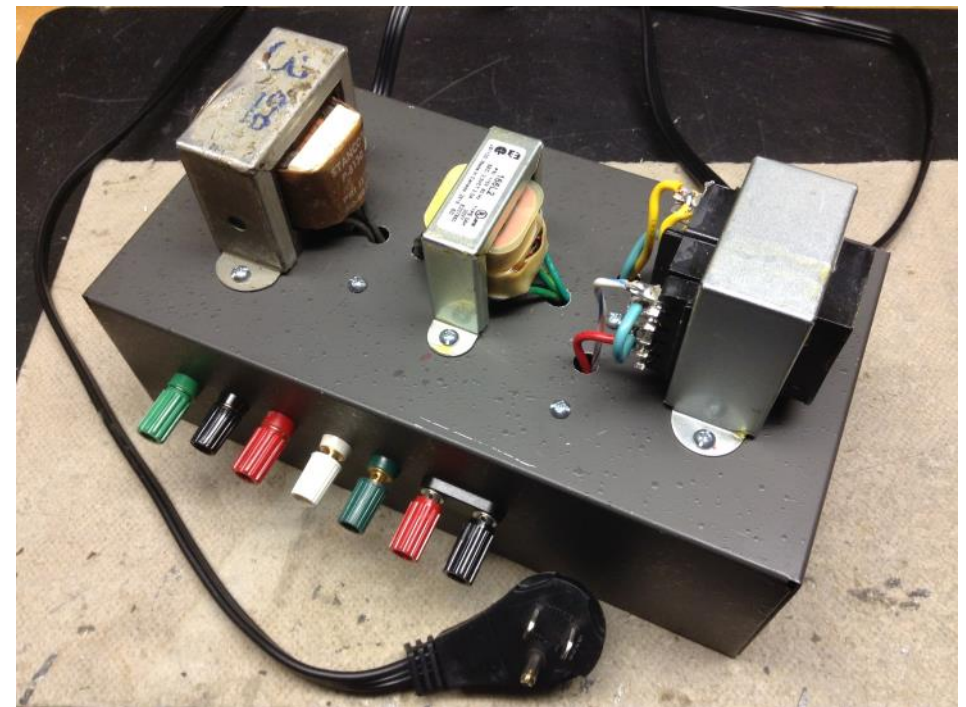
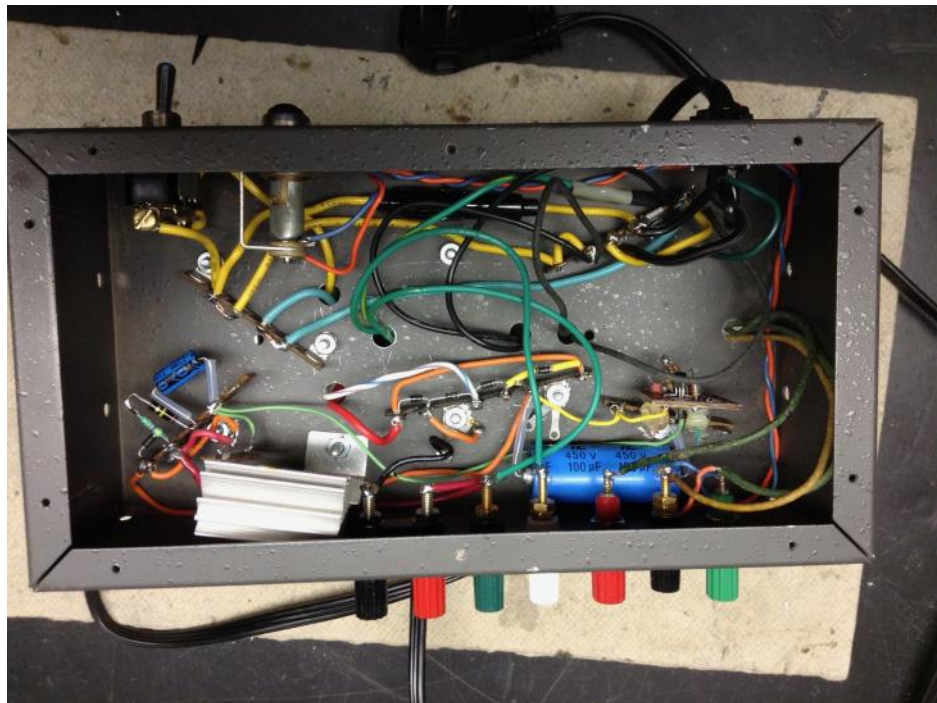
Building any Heathkit is a great “leg up” in this business. I decided what needed to be mounted first, second, and so on. I checked off each install and didn’t solder anything until I was sure every wire and component was affixed to each tie-point. I took special care to get the polarity right on the full wave rectifier (4 1N4007s). Last, I installed the 117VAC power cord, then I re-re-re-checked everything and made sure the hot side of the circuit didn’t have a short to ground.

Next, the smoke test using one of my Variacs. I always use a 1/2 Amp fuse in series with the 117VAC supply, even though the Power Supply is fused with a 1 Amp fuse. (Watch out here, everyone! Alligator clipped leads can easily brush each other and then it’s lights out at the workbench!)

I “started the engine,” as they say, and the Power Supply cranked, first time out. I get 250VDC, right on the nose. My 2.5VAC comes in at 2.7 and the 12.6VAC (CT for 6.3 volts) is also a bit more, since there’s no load on these other circuits.

How did I go about the job? I drew a virtual chassis on paper the size of the aluminum box and set to work drawing tie strips in pencil on the inside where I thought my wires would go. I had to alter the drawing only once. Then I drew in the components (primitive images!) and the hook-up wire connections. (Nothing fancy, mind you.) I did have to figure out how to mount the TIP50 and the 689 regulator. (I used hot glue at one point.)

All I have to do is hook up my new Hartley Oscillator and tinker with it to get 4 watts out to my 80 meter center-fed Zepp. You will notice that I still lack rubber thru-hole grommets on top of the chassis. I just ordered them online.





# K0SM AND HIS HARTLEY TRANSMITTERS

MARK ERDLE, AE2EA

There's a new AWA video of Andy, K0SM, discussing his handmade Hartley transmitters just before the 2019 AWA Bruce Kelley 1929 QSO Party started.

<https://youtu.be/Lli4DI2XFMQ>

# SKYWARN Recognition Day 2019

DUANE FREGOE, K2SI

SKYWARN Recognition Day will be December 7, 2019 (0000 – 2400 UTC). In local terms it is Friday December 6th, 7:00 PM until Saturday December 7th, 7:00 PM. National Weather Service offices across the country will be on the air for 24 hours. This special event was started in 1999. The goal is to contact as many weather service offices as possible using repeaters, IRLP, Echolink, and HF. This is a fun event for new hams that may only have a Technician license since they have privileges for repeaters, Echolink, and IRLP. The exchange is your name, temperature, and current weather condition such as windy, raining, snowing, overcast, etc. Many of the weather service offices will be on Echolink and IRLP. The National Weather Service office in Buffalo should be participating again this year. If you hear them on a local repeater check in and give them a report. Submit your total number of weather service office contacts for a certificate from the National Weather Service. More information is available from: <https://www.weather.gov/crh/skywarnrecognition> and also <http://www.arrl.org/skywarn-recognition-day>



[National Weather Service Newsletter](#)

# CHALLENGE TROPHY CAMPOREE

STEVE FELL, K2SRF

A special thanks to Mark Pederson KC2UES for his help at the CTC event 10/26/19. We had many Scouts check in to our station and learn about Ham Radio. The Triplexer and Filters for 20, 40 and 80 worked great. There was no indication on the other radios when we were transmitting on the third radio. Made contacts with Slovakia and Ireland on 20 meters



# COMPLIMENTS

Occasionally someone will send along a compliment. I would like to share them with you!

- Thanks as always, great publication (honestly, one of the few I read "cover to cover" actually).
- I wanted to pass along word from my brother in Phoenix. I pass along my link to the Rag to him and he shares it with a group of hams that he meets with weekly. They all enjoy the Rag and wish that RARA was located in Phoenix for all of the activities.
- A very impressive newsletter!



# 2019 RARA ANNUAL AUCTION

SCOTT THEIS, W2LW, RARA VICE PRESIDENT

This year's auction was a success on many levels. First, I would like to thank Ed Gable (K2MP) and Dick Goslee (KG2I) for their excellent work as auctioneers and for making the evening interesting. Turnout was high with over 100 members attending. What is more, the quality of the items was very good: 55 lots were auctioned with a total value of \$4250 (more than 2x last year)! Thanks to Tim Barrett, K9VB, Tim Brown (WB2PAY), Bill Hamalainen (KD2SER), Dave Mitchell (KD2RA), Mike Moore (KC2NM), and Ed Wilkonski (K1EM), for their help. Finally, I would like to thank Brian O'Connor (KA2CGB), for helping to improve and document the process for members and for the tireless amount of work he has put into surveying, picking up, sorting, testing and cleaning up donated equipment. I look forward to next year!





# NOVEMBER AUCTION

EV TUPIS, W2EV

By all counts, RARA's annual November auction was a resounding success!

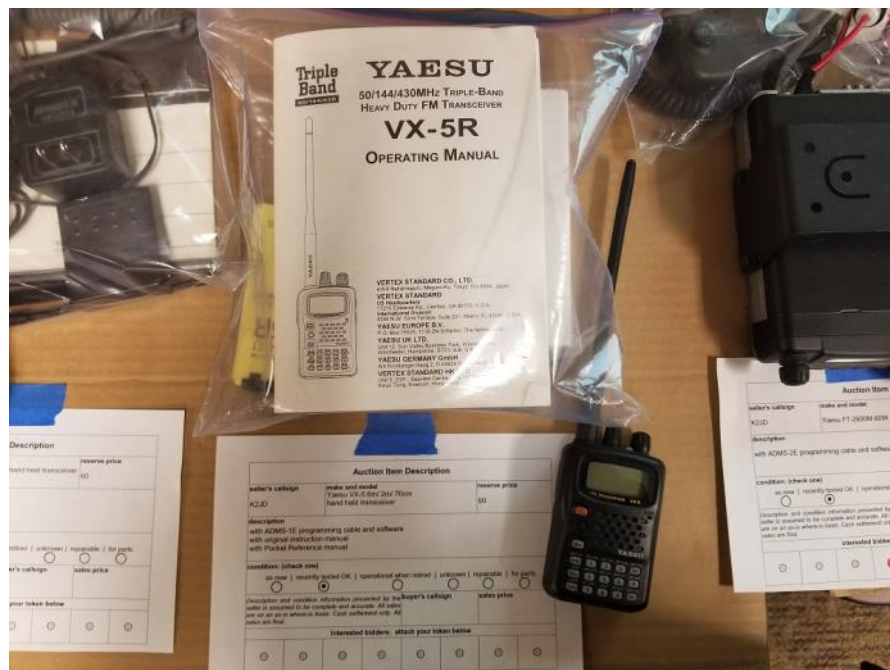
Though open only to members, the club was prepared to "re-up" and sign-up memberships as people arrived, quickly ushering them into the "big room" where several rows of equipment, accessories and antennas were lined up and nicely marked for pre-event perusal.

Seasoned auctioneers, Ed Gable and Dick Goslee delivered their usual entertaining fare to the delight of all.

New this year, "auction tags" that both described the item in greater detail and offered "dot space". Adhesive dots were handed out to participants upon arrival. The dots were to be affixed to items that the attendee would have an interest in. It was easy for the auctioneers to focus-in on items that had more dots. It helped to move things along nicely!

Items ranged from a 1200 Watt HF amplifier to HF radios and antennas to VHF antennas to 4-band VHF FM HT's and too many accessories to mention individually. If nothing else, folks left with a reminder to install batteries into the battery powered accessories they wished to auction off.

In the end, the evening was enjoyed by all.



# FROM VHF GREENHORN TO JOURNEYMAN: YOUR FIRST RADIO'S "EARS"

EV TUPIS, W2EV

This is an occasional installment of a RARA Rag series intended to give newly licensed amateurs real-world insights licensing guides don't. Let's talk about a major aspect of choosing a transceiver: its ability to "hear".

I hope that you find this information insightful, as we enter the "gift giving and getting" season just ahead.

Several years ago I attempted to "check in" to the Rochester Hamfest using a brand new \$30 HT. I called several times, but never got a response. Actually, I heard nothing on the "talk in" frequency. So...I gave up. When I got closer, I called again and this time, I heard a reply and checked in. With annoyance-in-their-voice, I was told that they heard me earlier and responded but that I didn't acknowledge. In fact, my earlier attempts were interfering with others as they were attempting to check in. My HT was "deaf". I was embarrassed.

So, let's save you from a similar fate.

Not all transceivers are created equal. The adage "you get what you pay for" rings true. But the question "what am I getting for what I'm paying" often goes unaddressed. Let's remove the mystery.

Two basic metrics come into focus: "12 dB SINAD" for FM transceivers and "Minimum Discernable Signal" for SSB transceivers. Each has its own scale. "12 dB SINAD" is measured in uV (microVolts) while "Minimum Discernable signal" is measured in dBm (decibels below a milliwatt).

In a nutshell: the lower the value, the more sensitive the radio is to decoding weaker signals. Yes, experienced VHF Journeymen and Master VHFers will quickly chime in to say that there are other factors that contribute to decoding success however this is where it all starts. If the radio is not capable of decoding weaker signals in the first place, those other factors mean very little.

If you are a member of the ARRL (and I hope that you are!), you can visit [ARRL.org](http://www.arrl.org) and read lab-testing results for many transceivers. Here's the link: <http://www.arrl.org/reviews-listed-by-manufacturer>

There, you will see that a quad-band (6 meters, 2 meters, 1.25 meters and 70 centimeters) Yaesu VX-8R HT was tested in the ARRL lab with impressive 12 dB SINAD values of .13 uV, .14 uV, .27 uV and .13 uV (respectively). You'll also see that an Icom IC-7100 base/mobile radio with HF+6,2,70 FM and SSB was tested with an equally impressive Minimum Discernable Signal of -142, -142 and -143 dBm on 6 meters, 2 meters and 70 centimeters respectively.

As you go searching for your first (low power) FM HT or your first (moderate

power) base, rely on these numbers in the QST reviews as a starting point. HOWEVER...

The challenge is to interpret what those numbers mean in the real world. For that, you are invited to attend RARA's affiliated partner-club, the Rochester VHF Group at their next meeting on Monday, December 2 at the Webster Public Library (980 Ridge Rd, Webster, NY 14580) at 7:00 PM. There's no "business meeting". Just a workshop lead by well known VHFer Dave Hallidy (K2DH) who will have lab equipment to test a variety of HT's, bases and even higher performance transverters for the VHF (and above) bands. You will be able to listen-in as a signal is injected into a radio's antenna port and slowly lowered until it can't be heard anymore. The signals' uV or dBm value will be noted and posted on a "leader board" where everyone can see how radios compare to each other in the real world. Bring yours! If there's time, they can test it, too!




# RAGS OF THE PAST

ED GABLE, K2MP, RARA HISTORIAN

## 20 Years Ago, December 1999

Lots of changes from our normal meeting arrangements are found in this issue as promised by program chairman Keith Freeberg, N2BEL. First is a bit of a change from our normal ham radio subjects as we learn that Mr. Mike Pryor, a noted computer and software developer for Eastman Kodak Company, will be our guest speaker. Mike has titled his presentation "Roll your Own" hinting at possible ideas for assembling your own personal computer. Secondly, the reader would learn that this meeting was the annual joint meeting with Kodak, this time hosted by the Elmgrove gang. Next you had to find the meeting venue complete with a detailed map and finally attendees were invited to use Elmgrove's own UHF repeater, WA2EGL/R, for Talk-In. Proudly reported herein was a report by RARA's Radio Coaches folks who announced they received a cash grant of \$1300.00 to further their ham radio informational program geared towards local school children. The grant donor, QUAD A, a philanthropic organization, in making the grant said they were very excited about the programs' mission and content and further, asked if more schools could be involved. The Coaches coordinator, Peter Fournia, W2SKY, immediately said "yes" and went to work expanding the group. With pen in hand again, Keith Freeberg this time wrote with details on this year's four day Holiday Technology Show, held at the Rochester Museum and Science Center and how local ham clubs could participate. Filling 2.3 full columns (typesetters probably measure differently) was a new series of articles written by Bill McDonnell, KG2F. Bill, a 20 year Senior Engineering Specialist with Harris/RF, was a fast scan amateur TV enthusiast and he shared his skills with RARA's RACES sponsored ATV Repeater. This column was a combination of fast scan TV technical matters as well as local ATV history. Continuing the ATV theme found a picture of Steve Gulack, N2DZS, demonstrating a received picture from an off-site ATV camera as received in the EOC command center via the K2JD



# the RARA RAG

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## Roll Your Own

### PC Computer Builders' Closely-Guarded Tips and Tricks

Keith Freeberg, N2BEL

Speaker for the joint RaRa/Kodak meeting will be Mr. Mike Pryor, a noted computer and software developer for Eastman Kodak Company. Mike has been arranging his work experience to help him know which options; mother boards, video cards and processors really work well together, and which ones offer those 'Special Features' you wouldn't want to pay for if you knew they were there.

As I am writing this, Mike is off visiting the testing labs of a CPU manufacturer that shall remain nameless. Who knows what new and exciting technological leaps forward and lovely lemons he is seeing first hand? Do you suppose he might be able to hint at what we might expect to see in computers this spring?

I remember Mike giving me some "helpful hints" on more than one occasion and I'm certain that just one of the 'hints' he will share with you this December will be worth the trip.

See the map below for entrance location within the Elmgrove facility. Enter the parking area at the Flagpole entrance and proceed to parking area just South of the Main entrance. We will be entering through the South side of the main building. Escorts will guide folks to the meeting room. Talk-in will be handled via WA2EGL Club Station on frequencies of 444.75 and 146.88.

## Radio Coaches

### Program Wins Grant

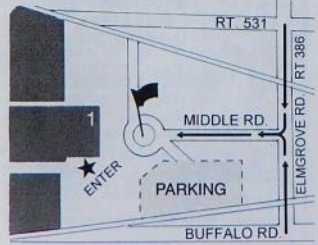
Keith Freeberg, N2BEL

The Radio Coaches Program of Rochester Amateur Radio Association has received a grant totaling nearly \$1300.00 from QUAD A, a local philanthropic organization, to keep the program going for the balance of the 1999/2000 school year. QUAD A is very excited about the programs' mission and content.

A QUAD A request of the Radio Coaches came in the form of a question; "Is Radio Coaches willing to go into more than one school with this same type of program?" The short answer was a resounding "Of course we are".

However, a great need exists for additional volunteers to help enrich the program and make preparations to serve other segments of Rochester area youth. All hams, and those interested in sharing knowledge with young people, are needed to administer it, both behind the scenes and in the classroom. Many area employers are seeing this as positive community involvement, and are willing to arrange time for those active participants.

Additional volunteers, who would like to contribute to this program, should call Radio Coach Coordinator Peter Fournia at 716-377-0535. Or, better yet, go to the Volunteer sign up web page and send in your interests. You will be contacted. The address is:  
[http://www.ggw.org/rara/R\\_Coach/help3.htm](http://www.ggw.org/rara/R_Coach/help3.htm).



### RaRa/Kodak Joint Meeting

December 3, 1999  
8:00 P.M.  
Kodak Elmgrove Plant  
Elmgrove Road, Route 386  
"Learning to Roll Your Own"  
by Mr. Mike Pryor

ATV repeater. Ed Gable's DX Happenings column he reported that RDXA's 1999, Field Day activity landed them #4 in the nation, as reported by RDXA team leader Raj Dewan N2RD. On the local DX scene Jeff Ach, W2FU, reported that he has acquired the necessary Town of Webster building permits to assemble three towers of 90, 125 and 150 feet high to build his big gun contest station. With regret it was reported Al Bowers N2JSZ, John Hevron Sr. KJ2P and Bob O'Connell NF2Z, were reported as silent keys. From the Want Ads you could buy an ICOM 751A Transceiver from Ed K2MP. A very long term advertiser, of over 20 years, was Glenwood Sales featuring surplus electronic parts from their Hague Street location. And in closing it is told when the holidays were almost done, amateurs everywhere were

## Ginna Drill



ATV at EOC: Steve Gulack discusses "scene" on big screen ATV monitor at EMERGENCY OPERATIONS CENTER during Ginna Drill, Nov. 17, '99. Image on monitor was transmitted to EOC Command by ATV, utilizing ATV repeater at K2JD.



If you just read the 1999, 20 Year article, you learned that there was a change of venue for that gathering. Here, too, RARA members found themselves in an unfamiliar location, namely the Genesee Hospital. No, nobody was sick or injured, but an interesting program was offered by speaker Ted Wright, KA2EUU, who spoke on the use of electronics in the biomedical field. Topics included Ultra sound equipment, digital thermometers, pacemakers and defibrillators. In a cooperative effort, headed by Tom Richmond WB2IEY, the leadership of the Rochester VHF Group and the Rochester Radio Repeater Association joined to plan on how FM operators could augment the annual VHF Group's January Contest scores. Readers also learned from Alan Komenski's (AC2K) Presidents Desk column, that the RARA Board approved using the W2XT Memorial fund to purchase a new Hy-Gain TH5DXX yagi antenna for the K2JD Club Station. Alan continued recognizing Ed Holdsworth N2EH and Ed Gable K2MP, for leading the charge in building the new club station located at the old IOLA site. The station consisted of three operating positions; a 1 kW SSB/CW HF station, a 75 watt HF CW set up for Novices and a VHF station for FM and Tech use. Membership Chairman Bob Erskine, W2NVZ, reported RARA membership stood at 802. Bob Roberts, WA2QAU continued his prolific writing with over a full page of DX news. Bob contributed to both new DX'ers with operating tips as well as news of DX stations currently on-the-air. Jim O'Brien, K2UDB, wrote a human interest article about the rig that got away.... And returned. It seems as a new ham Jim built his first receiver only to sell it a few years later. The buyer was very happy and kept Jim informed, for some 25 years, of the status of his radio child. Jim finally got a chance to meet the old buy-

er and arrangements were made to have Jim get his radio back. The ARRL reported that your votes brought Atlantic Division leaders to be Jesse Beiberman, W3KT, Director, and to Vice-Director Hugh Turnbull, W3ABC. From the Want Ads you could buy a complete Ten-Tec station from Mary Ballard W2ZRO. A new commercial advertiser was Dick Jenk, WB2EEU, offering placement services for Engineers and Designers at his Buffalo Road Superior Design complex.

# The RaRa Rag

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W2P24

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## Electronics In Biomedicine December 7th Meeting

by Otto Bluntzer, WB2RJB

The use of electronics in medicine has come to include a wide variety of instruments to improve the ability of medical personnel to diagnose, monitor, and in some instances to stimulate or maintain vital body functions.

Ted Wright, KA2EUU, will present RaRa with a general overview of a variety of medical instrumentation to include: Ultra sound equipment involving H. F. Sonar, Cardiac Stress testing, Digital thermometers, Doppler blood flow detectors, Pacemakers and Defibrillators. Ted is recognized for his outstanding expertise in his field of work.

Mr. Wright, the Chief of Biomedical Engineering at Genesee Hospital, will give the presentation at the hospital. Please use the ramp garage off Alexander Street. Specific information as to location of the auditorium where the meeting will be held will be available at the information desk. As usual the meeting time will be 8:00 p.m. sharp, Friday, December 7. Have your parking ticket validated at the meeting. RaRa will pick up the tab for parking.

## YOUR LAST ISSUE?

by Bob Erskine, W2NVZ  
RaRa Membership Chairman

This is the last issue of the RaRa Rag that some of you will receive. Those of you that have not renewed will be dropped from our current membership mailing list. Please check your membership card: and, if yours has expired see me at one of the meetings or mail your application and dues to me. If your renewal gets in early you will be able to continue receiving the RaRa Rag.

Our club membership is presently at 670 members. Last year we had 802 members. If most of who have not renewed sign up again we may exceed last years figure.

RaRa has the largest membership of a single local amateur radio club (ARRL Affiliate) in New York State. I believe that all of you would like to continue being a member of such a fine organization.

I still have directories available to full members. Please see me, or Irv Goodman, AF2K, at any of the meetings. A few of you may need a binder, they too are available but there is a limited quantity. If you cannot make the meetings and need a directory, drop me a line addressed to our Post Office Box 1388, Rochester, New York 14603.

## VHF GROUP/RRRA HUDDLE FOR CONTEST —

On Friday, December 14, at 8 p.m. there will be a joint meeting of the Rochester VHF Group and the RRRA at Harris Corporation, RF Communications Division, 1680 University Avenue. The program will consist of preparation for the January VHF Contest, presented by the 1980 VHF Group Chairman - Tom Richmond, WB2IEY, of Pumpkinhook, NY. Also on the agenda will be a slide show of previous VHF Contests. See you there! At the December 14th Pep Rally!

## VALENTINE DINNER-DANCE

Valentine's Day is really not that far away. And as it approaches its time to start planning to attend the RaRa Valentine Dinner-Dance.

Its our way of saying thanks to the YL's and XYL's for allowing us time with our hobby, and The Friday nights spent away from home attending meetings. Mark your calendar! The Date will be Saturday, February 9, 1980. Details to follow in next month's RAG.

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GC/THORSEN	Tools & Chemicals	MUELLER	Test Leads
SL WABER	Outlet Strips +	GOLDSTAR	Test Gear
WAHL	Soldering/Drilling	PALADIN	Tools
	Tools & Accy		

## ELECTRONIC COMPONENT PARTS

(NEW AND NEW SURPLUS)

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- HIGH QUALITY
- LOW PRICES
- IN-DEPTH INVENTORY

# VE TEAM

The next **ALWAYS FREE** testing session:  
 Saturday December 21st (Third Saturday)  
 Rochester Institute of Technology  
 Kate Gleason College of Engineering  
 Gleason School of Engineering  
 Room 3139, Bldg. 9  
 Use "J" parking lot

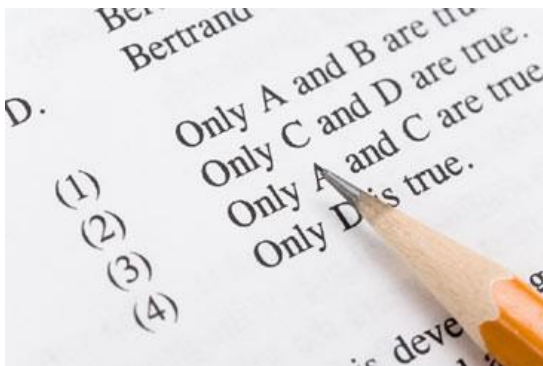
Registration at 9:45AM  
 Testing at 10:00AM

You do not have to preregister.

To avoid giving your SSN go to:  
<http://wireless.fcc.gov/uls/index.htm?job=home>  
 Register and bring the resultant FRN to the exam.

For more info and a map:  
[https://rochesterham.org/license\\_testing.htm](https://rochesterham.org/license_testing.htm)

Don Kiser - AC2EV  
 RARA Board member  
 VE Team Leader  
 585-613-1035



## CW ELMERS

Name	Call	Area	Email
Ned Asam	W2NED	Pittsford	<a href="mailto:w2ned@frontiernet.net">w2ned@frontiernet.net</a>
Tim Brown	WB2PAY	Ogden	<a href="mailto:tjbrown@rochester.rr.com">tjbrown@rochester.rr.com</a>
Pete Fournia	W2SKY	Penfield	<a href="mailto:pfournia@gmail.com">pfournia@gmail.com</a>
Bill Hopkins	AA2YV	Brighton	<a href="mailto:whopkin4@naz.edu">whopkin4@naz.edu</a>
Bob Karz	K2OID	Webster	<a href="mailto:rkarz@rochester.rr.com">rkarz@rochester.rr.com</a>
Joe Rowe	AG2Y	Webster	<a href="mailto:ag2y@rochester.rr.com">ag2y@rochester.rr.com</a>

Robert MacDonald Jr	KD2OHI	E	<b>Max Meinhold</b>	KC3OFA	T
Rafal Gan	KD2SWF	G	Jan van Edig	N2DLN	G
Zachary Keep	KC2WEY	G	<b>Eugene Taylor</b>	KD2SWG	T

New licensees names are in BOLD

## RADIO ELMERS

Name	Call	Area	Email
Tim Brown	WB2PAY	Ogden	<a href="mailto:tjbrown@rochester.rr.com">tjbrown@rochester.rr.com</a>
Dave Carlson	N2OA	Batavia	<a href="mailto:kdcarlso@gmail.com">kdcarlso@gmail.com</a>
Lawrence Hill	N2AJX	Henrietta	<a href="mailto:lawrence.hill@rit.edu">lawrence.hill@rit.edu</a>
Bill Kasperkoski	WB2SXY	Pittsford	<a href="mailto:wb2sxy@arrl.net">wb2sxy@arrl.net</a>
Don Kiser	AC2EV	N Greece	<a href="mailto:dkiser100@gmail.com">dkiser100@gmail.com</a>
Karl Heinz Kremer	K5KHK	Chili	<a href="mailto:k5khk@khk.net">k5khk@khk.net</a>
Tim Magee	WB2KAO	Greece	585-704-5747
Peter Schuch	WB2UAQ	Perinton	<a href="mailto:pschuch@rochester.rr.com">pschuch@rochester.rr.com</a>
Forest Shick	WA2MZG	Webster	<a href="mailto:fshick3@gmail.com">fshick3@gmail.com</a>
Dave Timmons	W2DST	N Greece	<a href="mailto:dstimmons@gmail.com">dstimmons@gmail.com</a>
Dan Waterstraat	W2DEW	Henrietta	<a href="mailto:higreen@rochester.rr.com">higreen@rochester.rr.com</a>



# RaRa CALENDAR

TIM BARRETT, K9VB, MEMBERSHIP SECRETARY

December 2019						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
<b>1</b>	<b>2</b> ARS Spartan Print	<b>3</b> Phone Fray QRP Foxhunt	<b>4</b> <b>RaRa Monthly Mtg</b> 7:00pm, BSA HQ, Brighton Henrietta TLR  ROC City Net 8:00pm 3.826 MHz CWops Mini-CWT Test	<b>5</b> <b>RaRa BoD Meeting</b> 5:45pm Nova- works 333 Metro Park Rochester 14623 ARES Net 146.61 MHz 7pm QRP Foxhunt QRP ARCI Topband Sprint SKCC Sprint Europe NCC Sprint	<b>6</b> <b>ARRL 160M Contest</b>	<b>7</b> <b>AWA Museum Open</b> 1pm - 5pm <b>ARRL 160M Contest</b> UFT Contest Wake-up1 QRP Sprint SKCC Weekend Sprintathon PRO CW Contest International Naval Contest FT Roundup Ukraine DX Contest
<b>8</b> <b>ARRL 160M Contest</b> UFT Contest Wake-up1 QRP Sprint SKCC Weekend Sprintathon PRO CW Contest International Naval Contest FT Roundup Ukraine DX Contest QRP ARCI Homebrew Sprint	<b>9</b>	<b>10</b> Phone Fray QRP Foxhunt	<b>11</b> ROC City Net 8:00pm 3.826 MHz <b>SIARC 7.30pm</b> CWops Mini-CWT Test	<b>12</b> ARES Net 146.61 MHz 7pm QRP Foxhunt NCC Sprint	<b>13</b>	<b>14</b> <b>AWA Museum Open</b> 1pm - 5pm PODXS 070 Low Band Sprint <b>ARRL 10M Contest</b> TRC Digi Contest
<b>15</b> PODXS 070 Low Band Sprint <b>ARRL 10M Contest</b> TRC Digi Contest CQC Colorado Snowshoe Run	<b>16</b> Run for the Bacon QRP Contest	<b>17</b> <b>RDXA 7.30pm Monroe Cty EOC</b> Phone Fray QRP Foxhunt	<b>18</b> ROC City Net 8:00pm 3.826 MHz CWops Mini-CWT Test	<b>19</b> ARES Net 146.61 MHz 7pm QRP Foxhunt NCC Sprint	<b>20</b> AGB Party Contest Russian 160M Contest OK DX RTTY Contest	<b>21</b> <b>AWA Museum Open</b> 1pm - 5pm Gedebage CW Contest Padang DX Contest Croatian CW Contest
<b>22</b> <b>ARRL Rookie Roundup, CW</b> Gedebage CW Contest Padang DX Contest Croatian CW Contest RAEM Contest	<b>23</b>	<b>24</b> Phone Fray	<b>25</b> ROC City Net 8:00pm 3.826 MHz CWops Mini-CWT Test	<b>26</b> ARES Net 146.61 MHz 7pm NCC Sprint DARC Christmas Contest	<b>27</b> RAC Winter Sprint	<b>28</b> <b>AWA Museum Open</b> 1pm - 5pm Original QRP Contest Stew Perry Top Band Challenge
<b>29</b> Original QRP Contest Stew Perry Top Band Challenge	<b>30</b> QCX Challenge	<b>31</b> Phone Fray QCX Challenge Bogor Old and New Contest				

# NEWS FROM AREA CLUBS

## MONROE COUNTY ARES / RACES NEWS

Monroe County Amateur Radio Emergency Service (ARES)® is an amateur radio public service organization based in Monroe County, New York, and is open to all licensed amateur radio operators. Monroe County Radio Amateur Civil Emergency Service (RACES) is a program of the Monroe County Office of Emergency Management. We participate in training and emergency exercises so that we can serve other agencies during times of communication failure.



The Monroe County Amateur Radio Emergency Service, Inc. holds its meetings on the fourth Thursday of each month except in July, August and November and December. Anyone interested, members and non-members, are welcome to attend.

On even numbered months the meetings are held at the Monroe County EOC, 1190 Scottsville Rd. (Media Room, 2nd floor, north end). On odd numbered months we meet at the Red Cross, 825 John St.. W Henrietta. at 6:00 PM. Please check our website for any schedule changes.

If the doors are locked, call WB2EOC on the 146.61 MHz (-) 110.9 Hz PL repeater.

Monroe County ARES/RACES meets on the air every Thursday of the month at 7:00 PM, on the N2MPE 146.61 MHz (-) 110.9 Hz PL and 444.45 (+) 110.9 Hz PL repeaters. Our club callsign is WB2EOC.

There is no net on nights when we hold our regular meeting, generally on the 4th Thursday of the month.

WEB: [www.monroecountymcomm.org](http://www.monroecountymcomm.org)

Facebook : Monroe County Amateur Radio Emergency Service, Inc.

Twitter @MCARESNY

**Severe Weather Alerts:** Winter may bring severe weather in the form of heavy snow storms, strong winds, and flooding. If you experience severe weather, especially when accompanied by damage to property in your area, listen to your local ARES/RACES repeaters for information. While official ARES/RACES activation could be a possibility, it is more important that we open a spontaneous net simply to share information about weather conditions in your immediate area. Don't wait for someone else to do it. Pick up the microphone and start a net. Have each check-in station give you a situational awareness report and emergency power report. If you don't have a copy of the directed net protocol, you can find one at the WEB address listed above. (Activities/ARES Net/ Net Script/

Downloads). We encourage all amateur radio operators to take a free Skywarn TM class offered by the National Weather Service. The schedule of classes can be found at [https:// www.weather.gov/buf/Skywarn](https://www.weather.gov/buf/Skywarn)

Monroe County ARES  
Ralph Dutcher, Net Control - [KD2BDZ@arri.net](mailto:KD2BDZ@arri.net)

## ROCHESTER DX ASSOCIATION, RDXA

RDXA meets the 3rd Tuesday of every month (September through June) except for December, which is the Annual Holiday Banquet. Meetings are open to everyone and all are encouraged to attend.



Meetings are held at the Monroe County EOC 1190 Scottsville Rd. (second floor), Rochester, NY 14624 at 7:30PM.

## ROCHESTER RADIO REPEATER ASSOCIATION

The Rochester Radio Repeater Association, RRRA invites you to attend its December 2019 meeting. Meetings are held on the 3rd Friday of the month in the Pittsford Town Hall Basement starting at 7:30 PM.

However, Since December is such a busy month due to the holidays, we have changed this meeting to a dinner out at the Golden Coral across the street from Southtown Plaza, Saturday December 21th. 2019 starting at 7:30pm.

Our regularly scheduled meeting on Friday December 20th may be used for VE Amateur License testing instead. Anyone interested in getting their license or upgrading to a higher class should visit our web page [www.k2rra.org](http://www.k2rra.org) to verify time, and available seating.

The RRRA officers for 2019/2020 are Bob Shewell, N2HJD President, Bob ODell, N2BZX Vice President, ED Wilkonski, KC2WM Secretary, and Bob Smith, NS2B-Treasurer / Membership Chairman. RRRA also accepts donations to the club. If you are not currently a member and want to support RRRA, you can join at our monthly meeting or on our web site [www.k2rra.org](http://www.k2rra.org)

## ROCHESTER VHF GROUP

The Rochester VHF Group has abandoned "boring business meetings" (and "death by PowerPoint") and adopted a live "Lab & Workshop" approach instead. Everyone is welcome to attend! The next one will be on MONDAY, DECEMBER 2 at 7:00 PM (a last minute date change!) ... Webster Public Library. A 15 minute Lab will demonstrate how electromagnetic waves bend in the troposphere. Of particular interest to newly licensed hams, a workshop will also demonstrate receiver performance of various VHF radios, including a variety of HT's and higher-end transceivers. We will put the results up on a "leader board" for all to see and compare! This is a "live" workshop so bring your radio, if there's time, we will test it, too! [www.rvhfg.org](http://www.rvhfg.org)

## XRX AMATEUR RADIO CLUB

The XRX Amateur Radio Club meets the 2nd Thursday of each month. The meetings are 6PM at the Webster Recreation Center. Look for details on our website <http://xarc.us>

## DRUMLINS AMATEUR RADIO CLUB

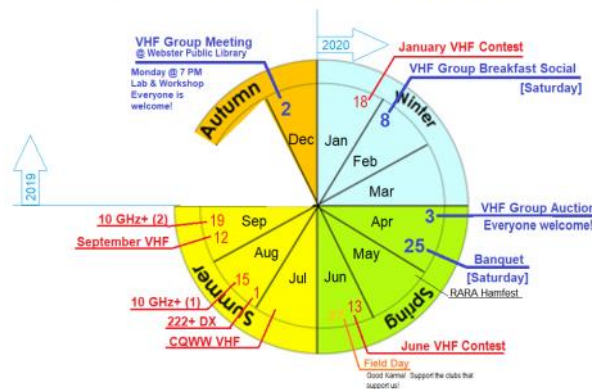
The Drumlins Amateur Radio Club meets every third Wednesday of the month at 7:30 PM at the Wayne County EMO/Sheriff's Office 7376 State Hwy 31 #1000, Lyons, NY 14489. Doors open at 7 pm, meeting starts at 7:30 pm. Announcements will be made on the 146.685 repeater. The Drumlins ARC website address is <http://drumlinsarc.us/>

## AMATEUR RADIO ASSOCIATION OF THE SOUTHERN TIER, ARAST

ARAST meets the third Thursday of every month at the Town and Country Fire Department on Gardner Rd in Horseheads New York. Chemung County ARES (CCARES) meets the first Tuesday of the month except February at Harris Hill. See [www.ccares.info](http://www.ccares.info) for details. CCARES covers the entire area in Chemung, Schuyler and Steuben counties and all are welcome.

Communicators are needed to help out with the 2019 Wineglass Marathon October 6, 2019 ( one week following the Hamfest). If you would like to help out,

The VHF Groups' 2019-20 Club Year



contact the emergency coordinator: [emergencycoordinator@stny.rr.com](mailto:emergencycoordinator@stny.rr.com)

Our website is still under construction. It is anticipated that construction will continue well into the year. Until that is finished check us out at [www.arast.info](http://www.arast.info).

Don't forget to check out our repeaters when you visit the area. The N3AQ 147.36(+) and the 146.70(-) are the principal 2 meter repeaters. Also Echolink is available using the call sign KA2BED-R. Check it out. A full list of available repeaters that can be heard in the twin tiers area surrounding Chemung County can be found at [www.arast.info/arast\\_website/public/repeaters.php](http://www.arast.info/arast_website/public/repeaters.php).

## COMMUNITY AMATEUR RADIO CLUB, CARC

If you are interested in being a part of this forward thinking and active club, visit us at a meeting or join us on one of our weekly nets. We meet at the Hoag Library (134 S. Main St. Albion, NY) on the first Saturday of each month at 7PM. Each meeting has a brief training/refresher period with upcoming topics including: net protocol, repeater set-up/maintenance, and digital signaling. The club holds a net every Sunday evening at 8pm (winter) and 9PM (summer) - 0100 UTC Monday - on 147.585 simplex, and we host the Thursday Night Social Net, Thursday at 8:30PM on 147.285+. We'd love to hear you check-in!

## DIGITAL COMMUNICATIONS ASSOCIATION OF PERINTON, DCAP

DCAP members continue to experiment with leading edge digital communication modes. We were formed in 1994 to foster the development of local and regional packet radio networks using AX25 and TCP/IP. Today we have members using the club sponsored DSTAR repeater (KB2VZS on 444.8MHz), several personal and publicly accessible DSTAR hotspots, Yaesu System Fusion systems on non-club repeaters and DMR systems through repeaters and personal hotspots. DCAP members meet for breakfast at 7AM nearly every Saturday morning at Rikki's Family Restaurant in the village of Fairport and everyone is welcome to join us. Talk in is on the KB2VZS analog repeater on 146.715MHz with a PL tone of 110.9Hz.

## KEUKA LAKE AMATEUR RADIO ASSOCIATION, KLARA

The purpose of our association is to:

- promote interest in Amateur Radio communication and advancement of the radio art.
- conduct programs, training, and exercises that enhance the skills of the members, and educate the community.
- develop ties with other services and establish relationships with community organizations.
- provide emergency communication services.
- promote enjoyable Amateur Radio related events.

The association was incorporated in 1991 and has been a vibrant part of the



community ever since. We have a very active VE testing program. We also participate in numerous public events (the Wineglass Marathon and the Wine Country Classic Boat Regatta are two of the largest).

We operate a system of three repeaters (which are linked), providing a large area footprint for two meter FM amateur use. Please see our website for details. ( [klara.us](http://klara.us) )

Our meetings are held on the second Wednesday of each month at the Civil Defense and Fire Training Center on Route 54 in Bath, NY.

## SQUAW ISLAND AMATEUR RADIO CLUB, SIARC

The Squaw Island Amateur Radio Club (SIARC) meets every second Wednesday of the month at 7:30PM at the Ontario County Safety Training Facility, 2914 County Road 48, Town of Hopewell. We have License Exam Testing every other month which begins at 6:30PM. The December meeting will be our annual holiday dinner at the AWA on Routes 5 and 20 in Bloomfield. The club will provide pizza and drinks and attendees are asked to bring a dish to pass, as well their table service. If the weather is questionable, monitor the 146.820 repeater to see if it is cancelled. The event will begin at 6:30pm. 73's Steve Benton VP SIARC WB2VMR

## WESTSIDE AMATEUR RADIO CLUB

The mission of the Westside Amateur Radio Club is to provide emergency communications services to the community, to assist other civic organizations, to promote the technical craft of amateur radio through class training and testing, to mentor new members, and enhance fellowship among radio amateurs.

The Westside Amateur Radio Club meets on the first Tuesday of the month, 7PM, at the Prudential Kares Realty, 3313 Chili Ave., Rochester, NY 14624. Park / enter on the left side of the building and meet in the lobby.

The talk in repeater for all meetings is the WR2AHL Repeater 146.760MHz - 110.9. AllStar, Echolink, and web streaming connections are available. Website: <http://WestsideAmateurRadio.club>

## INTERLOCK ROCHESTER - K2HAX - ROCHESTER'S HACKERSPACE

Visit our website at <http://www.interlockroc.org/>, contact us at [info@interlockroc.org](mailto:info@interlockroc.org), or find us in #interlock on Freenode IRC.

## ROCHESTER MAKERSPACE

For more information visit <https://www.makerspacerochester.org/hamradio>

## GENESEE VALLEY AMATEUR RADIO ASSOCIATION

Email [n3dsp@lafireline.net](mailto:n3dsp@lafireline.net) for details.

## ASTRONOMY SECTION ROCHESTER ACADEMY OF SCIENCE

For more information visit <http://www.rochesterastronomy.org/>

## THE AMATEUR'S CODE

Originally written by Paul M. Segal, W9EEA (1928)

### THE RADIO AMATEUR IS:

<b>CONSIDERATE</b>	Never knowingly operating in such a way as to lessen the pleasure of others.
<b>LOYAL</b>	Offering loyalty, encouragement and support to other amateurs, local club, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.
<b>PROGRESSIVE</b>	With knowledge abreast of science, a well built and efficient station and operation beyond reproach.
<b>FRIENDLY</b>	With slow and patient operation when requested, friendly advice and counsel to the beginner, kindly assistance, co-operation and consideration for the interests of others. These are the hallmarks of the amateur spirit.
<b>BALANCED</b>	Radio is an avocation, never interfering with duties owed to family, job, school or community.
<b>PATRIOTIC</b>	With station and skill always ready for service to country and community.

## RArA MARKETPLACE

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Contact us for details at  
[editor@rochesterham.org](mailto:editor@rochesterham.org).



# RARA OFFICERS, DIRECTORS AND COORDINATORS

## OFFICERS

<b>President:</b> Tim Guyot, KB1POP	(585) 406-3163	<a href="mailto:timguyot@gmail.com">timguyot@gmail.com</a>	<b>Treasurer:</b> Brian O'Connor, KA2CGB	(585) 721-2346	<a href="mailto:ka2cgb@arrrl.net">ka2cgb@arrrl.net</a>
<b>Vice-President:</b> Scott Theis, W2LW	(845) 774-9809	<a href="mailto:sa_theis@hotmail.com">sa_theis@hotmail.com</a>	<b>Secretary:</b> Karl Heinz Kremer, K5KHK	(585) 503-7214	<a href="mailto:k5khk@khk.net">k5khk@khk.net</a>

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## ACTIVITY COORDINATORS

<b>Club Historian</b>	Ed Gable, K2MP	<a href="mailto:egable@rochester.rr.com">egable@rochester.rr.com</a>	<b>Public Service</b>	Mike Moore, KC2NM	<a href="mailto:mikemoore@ieee.org">mikemoore@ieee.org</a>
<b>Club Station Trustee</b>	Jim DiTucci, N2IXD	<a href="mailto:n2ixd@arrrl.net">n2ixd@arrrl.net</a>	<b>Raffle Administrators</b>	Forest Shick, WA2MZG Jeff Sonstein, KD2RRB	<a href="mailto:wa2mzg@arrrl.net">wa2mzg@arrrl.net</a>
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<b>VE Team</b>	Don Kiser, AC2EV	<a href="mailto:dkiser100@gmail.com">dkiser100@gmail.com</a>	<b>Refreshments</b>	Rich Hoffarth, K2AXP	<a href="mailto:rhoffarth2000@yahoo.com">rhoffarth2000@yahoo.com</a>
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<b>Membership Secretary</b>	Tim Barrett, K9VB	<a href="mailto:tim.k9vb@gmail.com">tim.k9vb@gmail.com</a>			

## ROCHESTER AREA RADIO CLUB CONTACTS

### Antique Wireless Association (AWA)

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### Amateur Radio Association of the Southern Tier (ARAST)

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### Astronomy Section Rochester Academy of Science

Mark Minarich: [mminaric@rochester.rr.com](mailto:mminaric@rochester.rr.com)

### Community Amateur Radio Club (CARC)

Joe Gangi, AC2NB: [ac2nb.carc@gmail.com](mailto:ac2nb.carc@gmail.com)

### Digital Communications Association of Perinton (DCAP)

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### Drumlins Amateur Radio Club Ltd. (DARC)

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### Fisherman's Net Amateur Radio Club

Jim Sutton, N2OPS: [jim@otrym.org](mailto:jim@otrym.org)

### Genesee Valley Amateur Radio Assn.

Bill Boyd, N3DSP: [N3DSP@lafireline.net](mailto:N3DSP@lafireline.net)

### Keuka Lake Amateur Radio Association (KLARA)

Gary Stratton, KC2YTD: [keukelakeara@gmail.com](mailto:keukelakeara@gmail.com)

### Monroe County ARES / RACES

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### Orleans County Amateur Radio Club (OCARC)

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### Rochester Amateur Radio Association (RARA)

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### Rochester Institute of Technology ARC

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### Rochester Makerspace

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### Rochester Radio Repeater Association (RRRA)

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### Rochester VHF Group (RVHFG)

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### Westside Amateur Radio Club

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### XRX Amateur Radio Club

Brian Donovan, K2AS: [k2as@outlook.com](mailto:k2as@outlook.com)

## DECEMBER RAG DEADLINE NOVEMBER 15, 2019



**RARA meets at 7PM on the first  
Wednesday of each month. Join us at:**

Seneca Waterways Council, BSA Headquarters  
2320 Brighton Henrietta Town Line Rd  
Rochester, New York 14623

### GET DIRECTIONS

## Rochester Area Repeater Listing

### *THE RARA RAG*

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